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IS 3741-1 (1990): Medical Instruments - Sedimentation Tubes, Part 1: Westergren Tube [MHD 12: Hospital Equipment]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
चिकित्सीय उपकरण — अवक्षेपण ट्यूबें — विशिष्ट

भाग 1 वेस्टर्ग्रेन ट्यूब

(दूसरा पुनरीक्षण)

Indian Standard

MEDICAL INSTRUMENTS —
SEDIMENTATION TUBES — SPECIFICATION

PART 1 WESTERGREN TUBE

(*Second Revision*)

UDC 616·151·6-008·816 : 615·471 : 666·172·7

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on 20 March 1990, after the draft finalized by the Medical Instruments and Disposables Sectional Committee had been approved by the Medical Equipment and Hospital Planning Division Council.

This Indian Standard was first published in 1966 and revised in 1980. In this second revision, the standard has been splitted in two parts as follows:

Part 1 Westergren tube

Part 2 Wintrobe tube

This Part 1 deals with Westergren tube used to determine the erythrocyte sedimentation rate (ESR) in human blood containing an anti-coagulant by the Westergren method. In this revision, modifications have been incorporated in the requirements of material, workmanship and finish and scale graduations.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MEDICAL INSTRUMENTS — SEDIMENTATION TUBES — SPECIFICATION

PART 1 WESTERGREN TUBE

(*Second Revision*)

1 SCOPE

1.1 This standard specifies requirements for Westergren tubes (also known as ESR or BSR tubes) used to determine the sedimentation rate of erythrocytes in human blood containing an anti-coagulant by Westergren method.

2 REFERENCE

2.1 IS 2303 : 1963 'Methods of grading glass for alkalinity' is a necessary adjunct to this standard.

3 MATERIAL

3.1 The Westergren tube shall be made from transparent glass (other than soda glass) tubing, free from visible defects and reasonably free from internal stresses. The glass shall pass alkalinity test prescribed in IS 2303 : 1963. It may also be made from functionally compatible transparent plastics suitable for the process to be used for sterilization and free from defects liable to make it unfit for correct use.

4 SHAPE AND DIMENSIONS

4.1 The shape and dimensions of Westergren tubes shall be as shown in Fig. 1.

5 WORKMANSHIP AND FINISH

5.1 The Westergren tubes shall be well annealed, free from bubbles and as free as possible from striae, stones and other defects which impair observation of the top column of blood and top of the red cell layer. The top of the tube shall be slightly rounded. It shall be ground smooth and square with the axis of the tube.

5.2 The lower end of the tube shall be tapered as shown in Fig. 1 and the tapered portion shall be finely ground or polished.

5.3 The specified bore of the tube shall be maintained throughout the length.

6 SCALE GRADUATION AND NUMBERING

6.1 Scale

6.1.1 A scale, graduated in millimetres shall extend downwards for at least 180 mm from the

zero mark, situated 200 mm above the lower end of the tube. It shall not run over the tapered portion.

6.1.2 There shall be a space of 1 mm between the centres of adjacent graduation lines.

6.2 Graduation Lines

6.2.1 Graduation lines shall be of uniform thickness not greater than 0.3 mm.

6.2.2 Graduation lines shall be in planes at right angles to the axis of the tube and shall be of uniform spacing.

6.2.3 The graduation lines and numbers shall be clear, easy to distinguish, permanent and of uniform size.

6.2.4 The numbering of the graduation lines and their lengths shall be as follows:

Long graduation lines — 0 mm, 10 mm, 20 mm, etc. The length of lines shall be at least 6 mm.

Medium graduation lines — 5 mm, 15 mm, 25 mm, etc. The length of lines to be at least 6 mm.

Short graduation lines — The length of lines shall be at least 2.5 mm.

6.2.5 The graduation lines shall be numbered from top to downwards. The top line shall be numbered zero, every 10th line thereafter shall be appropriately numbered. Each number shall be close to its corresponding graduation line.

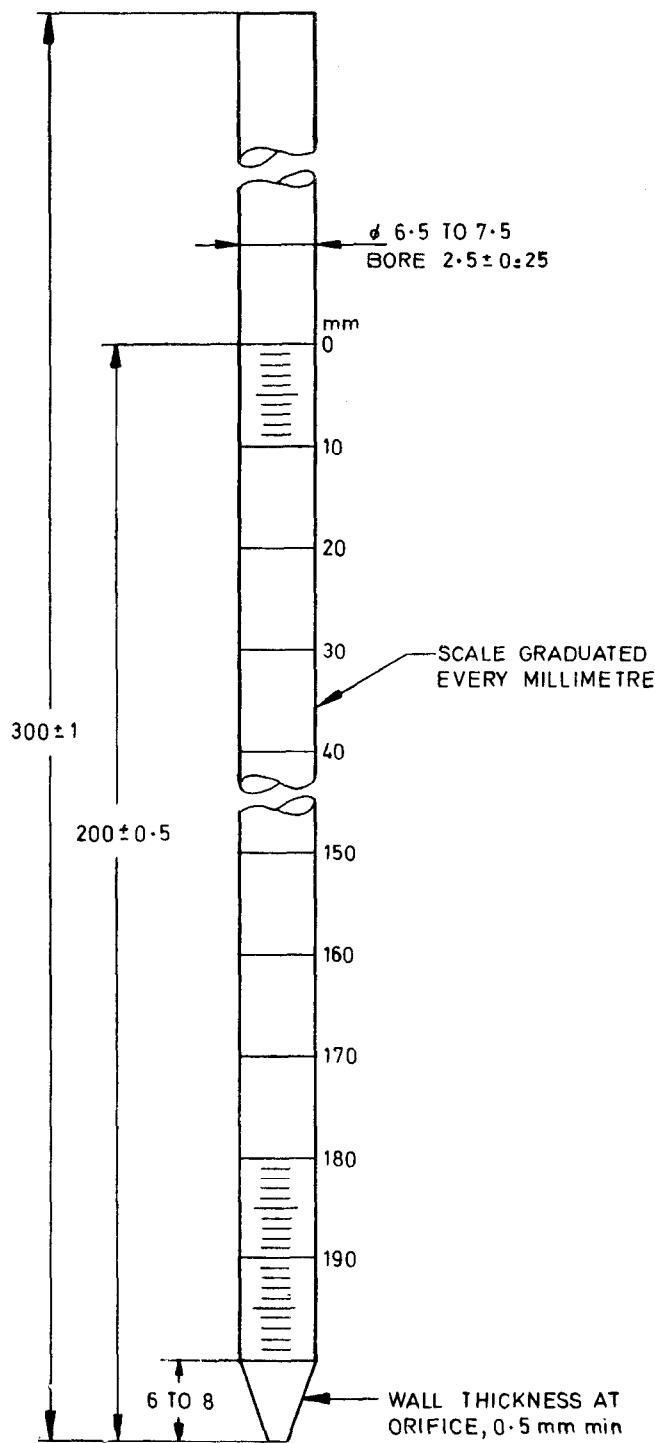
7 MARKING

7.1 Each Westergren tube shall be legibly and indelibly marked with the following information:

- a) Indication of the source of manufacture; and
- b) Unit 'mm' placed close to the zero mark.

8 PACKING

8.1 The Westergren tubes shall be packed as required by the user.



All dimensions in millimetres.

FIG. 1 WESTERGREN TUBE

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Doc : No. MHD 12 (2105)

Amendments Issued Since Publication

| Amend No. | Date of Issue | Text Affected |
|-----------|---------------|---------------|
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